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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/781,278	02/13/2001	Seiji Umemoto	Q63079	9442

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EXAMINER

AKKAPEDDI, PRASAD R

ART UNIT

PAPER NUMBER

2871

DATE MAILED: 10/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/781,278

Applicant(s)

UMEMOTO, SEIJI

Examiner

Prasad R Akkapeddi

Art Unit

2871

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) Responsive to communication(s) filed on \_\_\_\_.
  - 2a) This action is FINAL.      2b) This action is non-final.
  - 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.
- Disposition of Claims**
- 4) Claim(s) 1-13 is/are pending in the application.
  - 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
  - 5) Claim(s) \_\_\_\_ is/are allowed.
  - 6) Claim(s) 1-13 is/are rejected.
  - 7) Claim(s) \_\_\_\_ is/are objected to.
  - 8) Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 20 July 2001 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

### Priority under 35 U.S.C. §§ 119 and 120

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

### Attachment(s)

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_.
- 4) Interview Summary (PTO-413) Paper No(s) \_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: \_\_\_\_

## DETAILED ACTION

1. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

### *Drawings*

2. New corrected drawings are required in this application because:

The Applicant claims that only Figs. 1A, 1B, 1C and 2 are present in the application. However, the instant application contains Figs 1-9, in addition to the above mentioned figures. Figs 1-9 and Figs 1A,1B,1C, 2 are attached to this office action for clarification. The Examiner is confused as to which ones are the appropriate ones.

Applicant is advised to employ the services of a competent patent draftsperson outside the Office, as the U.S. Patent and Trademark Office no longer prepares new drawings. The corrected drawings are required in reply to the Office action to avoid

abandonment of the application. The requirement for corrected drawings will not be held in abeyance.

***Response to Arguments***

3. Applicant's arguments with respect to claims 1-13 have been considered but are moot in view of the new ground(s) of rejection. The original rejections for claims 1-10 as stated in the Office action dated April 16, 2002 are still valid. In addition the newly added claims have been considered and are rejected as follows:

***Claim Rejections - 35 USC § 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claims 1 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akins et al. (Akins) (U.S. Patent No. 6,285,426).

As to claim 1: Akins discloses a reflector (10) comprising a transparent film (16), an adhesive layer (30) (Col. 5, lines 14-15), a groove structure (32) provided on the other surface of the transparent film (16), the groove structure having a plurality of grooves including optical path changing slopes aligned in a substantially constant direction at an inclination angle in a range of from 10 to 60 degrees (Col. 6, line 33), a transparent cover film (28) formed so as to cover an

outer surface of the groove structure; and a light diffusing type reflection layer disposed on an outer surface (Col. 5, lines 38-40).

Note that the range for the angles as disclosed by Akins overlaps the range of about 35 to 48 degrees (asserted in claim 1). Therefore, the range in claim 1 would have at least been obvious. See In re Malagari, 499 F.2d 197, 182 USPQ 549 (CCPA 1974).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the Akins et al. reflector with the groove structure having inclination angles in the range of 35 to 48 degrees.

As to claims 7-8: Akins discloses the ridge lines are inclined at an angle between 10 to 60 degrees and the adhesive layer is of light diffusing type (Col. 5, lines 15-16). Note that the range for the angles as disclosed by Akins overlaps the range of +/- 30 degrees (asserted in claim 7). Therefore, the range in claim 1 would have at least been obvious. See In re Malagari, 499 F.2d 197, 182 USPQ 549 (CCPA 1974).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the Akins et al. reflector with the groove structure having inclination angles in the range +/- 30 degrees.

As to claims 9-10: Akins discloses a lighting external light double mode transmission type liquid crystal display device (Col. 1, lines 62-67) having reflector as described above. The reflector is suitably affixed (bonded) (Col. 5,

line 11) to a back side (Fig. 2) through an adhesive layer (30) of the reflector.

Akins also discloses a light source (76) disposed on a side surface (16, bottom side) of the liquid crystal panel and the side (bottom) surface facing the optical path changing slopes (42) of the reflector.

Note that the range for the angles as disclosed by Akins overlaps the range of about 35 to 48 degrees (asserted for the reflector in claim 1). Therefore, the range in claim 1 would have at least been obvious. See In re Malagari, 499 F.2d 197, 182 USPQ 549 (CCPA 1974).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the Akins et al. reflector with the groove structure having inclination angles in the range of 35 to 48 degrees.

6. Claims 2-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akins as applied to claim 1 above, and further in view of Naito (U.S. Patent No. 6,091,469) and Zimmerman et al. (Zimmerman) (U.S. Patent No. 5,598,281).

a. As to claim 2: Akins discloses a reflective metallic layer (68) on the prismatic surfaces, but does not disclose two kinds of slopes. However, Naito discloses a reflector with two kinds of slopes in which one kind of slopes aligned in a substantially constant direction, while the other kind of slopes are aligned substantially in a direction opposite (Fig. 2). Neither Akins nor Naito disclose a release liner. However, Zimmerman discloses a release liner (112) and an adhesion layer (28). Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the reflector

with two kinds of slopes as disclosed by Naito for eliminating interference from the surface reflected light while providing a bright display over a wide angle and increasing the viewing angle (Col. 3, lines 18-20), and the release layer as disclosed by Zimmerman for ease of fabrication of the grooves during the photolithography step (Col. 10, lines 11-40).

As to claims 3-4: Akins discloses the inclination angle of each of said optical path changing slopes with respect to the film plane is in a range of from 10 to 60 degrees and the grooves have generally triangular cross section (Col. 6, lines 26-27).

Note that the range for the angles as disclosed by Akins overlaps the range of about 35 to 48 degrees (asserted in claim 1). Therefore, the range in claim 1 would have at least been obvious. See In re Malagari, 499 F.2d 197, 182 USPQ 549 (CCPA 1974).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the Akins et al. reflector with the groove structure having inclination angles in the range of 35 to 48 degrees.

7. Claims 5 and 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Akins in view of Bao et al. (Bao) (U.S. Patent No. 6,266,108).

Akins does not disclose a groove structure with flat surfaces. However, Bao discloses a light reflector with flat surfaces having an inclination angle of 4.2 degrees which is not larger than 5 degrees as recited. Bao also discloses that the

grooves are discontinuous. Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adapt the groove structure with flat surfaces to enable the viewing of an image in a dark environment while not spoiling the image quality in a bright environment.

8. Claims 11-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Akins et al. (Akins) (U.S. Patent No. 6,285,426).

Akins discloses a transmission-type liquid crystal panel (Fig. 2) having a viewing side (top) and a back side (bottom) opposite to the viewing side with a reflector (10) comprising a transparent film (16), an adhesive layer (30) (Col. 5, lines 14-15), a groove structure (32) provided on the other surface of the transparent film (16), the groove structure having a plurality of grooves including optical path changing slopes aligned in a substantially constant direction at an inclination angle in a range of from 10 to 60 degrees (Col. 6, line 33), a transparent cover film (28) formed so as to cover an outer surface of the groove structure; and a light diffusing type reflection layer disposed on an outer surface (Col. 5, lines 38-40), as recited in instant claims 11 and 12. Akins also discloses in Fig. 2 that the transparent cover film (16) has planar configuration, as recited in instant claim 13.

Note that the range for the angles as disclosed by Akins overlaps the range of about 35 to 48 degrees (asserted in claim 11). Therefore, the range in claim 11 would have at least been obvious. See In re Malagari, 499 F.2d 197, 182 USPQ 549 (CCPA 1974).

Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to further modify the Akins et al. reflector with the groove structure having inclination angles in the range of 35 to 48 degrees.

### ***Response to Arguments***

9. Following is the response by the examiner to the applicant's arguments.

Applicant's argument No. 1 (page 9, lines 14-16): Applicant suspects that this particular single-reference is erroneously made under 35 U.S.C. 103 (a) and would fit more properly under 35 U.S.C. 102.

Examiner's response for argument No. 1: Since the range of angles for the reflector as disclosed by Akins, i.e., 10 to 60 degrees (col.6, line 33) overlaps the 35 to 48 degrees as claimed in the instant application, the rejection based upon 35 U.S.C 103 (a) is appropriate.

Applicant's argument No. 2 (page 11, lines 1-11): Reference '426 does not disclose an adhesive layer disposed on one surface of a transparent film and a groove structure provided on the other surface.....the reflection layer is not provided on the prismatic structure as in '426 but is separate from the prismatic structure.

Examiner's response to argument No. 2: Though Akins assigns numeral (16) to a number of items in Figs. 1 and 2, it can clearly be seen that the transparent film, labeled (16) near item (28) is the one identified in the previous Office action and this film is a transparent. The instant claims recite the limitation 'a light diffusing reflection layer'.

Akins teachings include a transparent adhesive (30) that may be diffusive (col. 5, lines 15-16), i.e., diffused reflector that is on one side of the transparent film.

Applicant's argument No. 3 (page 11, lines 12-13): The inclination angle of the claimed invention is set in a range from 35-48 degrees. The inclination angle (56) of '426 is set at about 15 degrees.

Examiner's response to argument No. 3: Please see (col.6, line 33) of '426.

Note: All the references are previously cited.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Prasad R Akkapeddi whose telephone number is 703-305-4767. The examiner can normally be reached on 7:00AM to 5:30PM M-Th.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert H Kim can be reached on 703-305-3492. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0530.

*PRR*

Prasad R Akkapeddi  
Examiner  
Art Unit 2871

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*RHK*  
ROBERT H. KIM  
SUPERVISOR, FEBRILAR 2001  
T703-305-3492